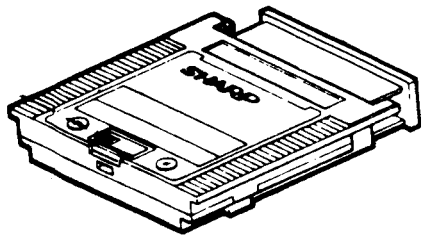
SHARP SERVICE MANUAL

CODE : 00ZCE1601MSME

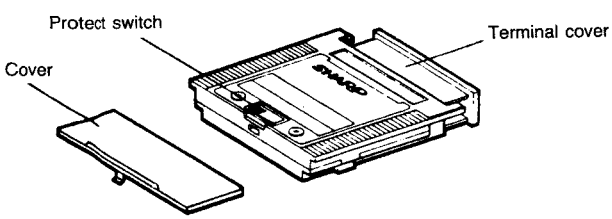


MODEL CE-1601M

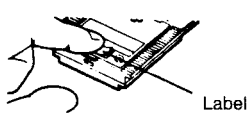
1. Specifications

Product name:	RAM module
Model:	CE-1601M
Storage:	64 K-bytes
Power source for backup:	3V⎓(DC); lithium cell (CR2032) (1)
Cell life:	When module is in the computer: about 5 years; when not in the computer: about 20 months. (when kept at 20°C/68°F. Life time varies depending on module usage and environment.)
Temperature:	0°C to 40°C/32°F to 104°F
Dimensions:	Height 8.5mm/(11/32″) Length 40.9mm/(1-5/8″) Width 42.8mm/(1-11/16″)
Weight:	15g (including the cell)
Accessories supplied:	Case, cover labels (3), space cover, lithium cell (inserted in the module), operation manual.

2. Parts identification



Protect switch
When the switch is set to the side marked with a "●" mark, the RAM module is write prohibited so that the RAM contents may not be erased and changed.
When the switch is set at the other side, the write protect is released.
* To prevent incidental power off after the write protect is set, a label is attached to the switch area.



3. Operation

The CE-1601M must be mounted in the PC-1600 memory slot S2.
If mounted in the memory slot S1, the computer may not perform properly or data may not be written properly in the RAM module.
There are following four ways of using the RAM module.
A) The entire 64KB area used as a RAM file.
B) A 32KB area is used for a program memory and the remaining 32KB area for a RAM file.
C) A 32KB area is used for an expansion memory and the remaining 32KB area for a RAM file.
D) A 32KB area is used for a program memory and an expansion memory, and the remaining 32KB area is used for a RAM file.

SHARP CORPORATION

4. Module installation

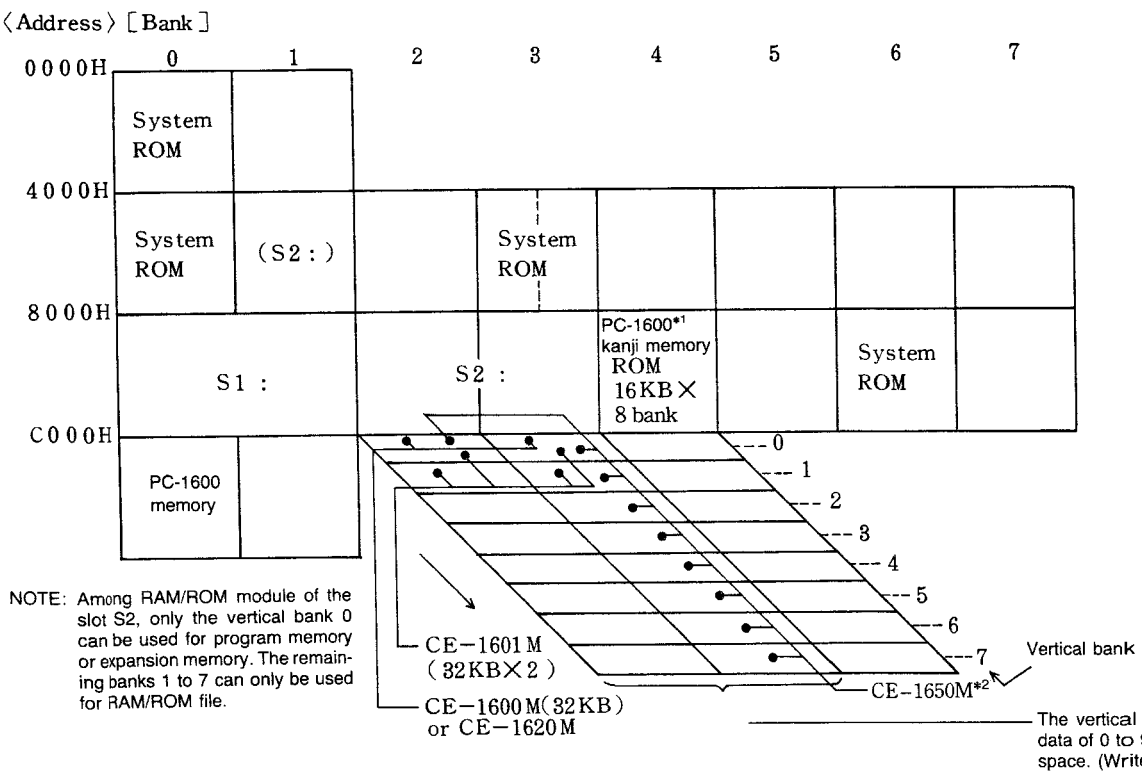
		Mode	Installation command	64KB RAM module	
				User size	Directories
1	A	To use the entire module as RAM file	① TITLE [ENTER] ② NEW 0 [ENTER] [Because the contents of the expansion memory and data are all cleared, they must be saved in another memory device if they are to be used again.] ③ INIT "S2:", "F" [ENTER]	61KB (62,464B)	48
	B	32KB ····· Program memory [BASIC test area = 32.571 bytes, Reserve program area = 189 bytes] Rest of memory ··· RAM file	④ INIT "S2:", "P" [ENTER]		
	C	32KB ····· Expansion memory [Expansion memory (S0) area increases 32.768 bytes more.] Rest of memory ··· RAM file	④ INIT "S2:", "M" [ENTER]	29.5KB (30,208B)	48
	D	32KB — Expansion memory / Program memory Rest of memory ··· RAM file	④ INIT "S2:", "P", n. [ENTER] "n" represents the program memory size. Odd number of KB from 2 to 32 (32 − n) KB represent the size of expansion memory.	[Same value as the CE-1600 is used for RAM file.]	

NOTES:

(1) It is not possible to change the RAM module mode, if there is data already existing in the module.
One of the following operations is required in order to change the RAM module mode.
- ○Delete all files using the KILL command.
- ○Type TITLE "S2:" [ENTER] NEW 0 [ENTER] to clear the contents of program memory.
- ○Type TITLE [ENTER] NEW [ENTER] to clear the contents of the expansion memory.

5. Memory map

(Map seen from the SC7852)



*1, *2: Japan only

NOTE: Among RAM/ROM module of the slot S2, only the vertical bank 0 can be used for program memory or expansion memory. The remaining banks 1 to 7 can only be used for RAM/ROM file.

6. Precautions

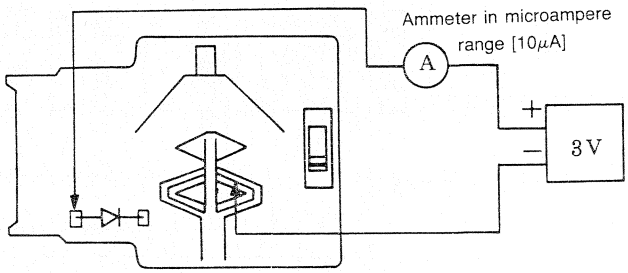
(1) When the computer is reset while accessing a file in this RAM module, NEW0? may be displayed. Push the CL key to clear the display. The contents of the main memory and RAM module memory are still retained in this case.
(2) See the description below for the function of the write protect switch.

DIP SW	Function	Note
	Enables to write data in the module.	
• side	Disables to write data in the module (ROM module).	Above A) and B) are permitted.

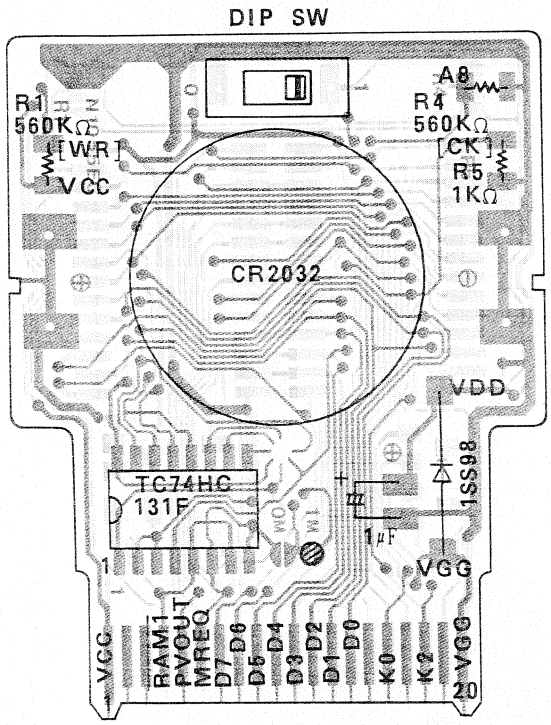
(3) To replace battery cell without connection of the AC adapter to the PC-1600, the RAM module must be removed from the PC-1600 if the RAM module is being used as a RAM file or program file.
After replacing with fresh battery, all reset the PC-1600 before mounting the RAM module.
Because program or data within the expansion memory are cleared after replacing battery, the memory contents must be saved on the floppy disk or cassette tape if it should be used again.

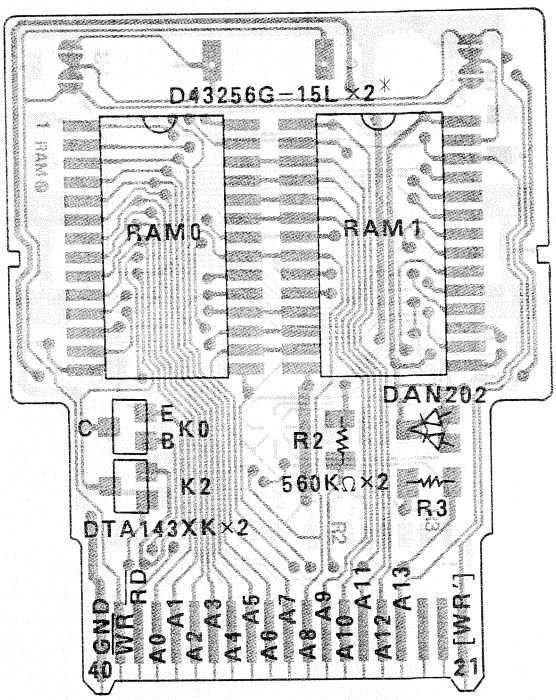
7. Service precautions

(1) All parts must be closely attached on the PWB.
(2) Pin of the dip switch soldered must be cut not longer than 1.5mm at a maximum.
(3) To check current, add 3VDC across battery terminal and diode anode. It must be less than 9μA.



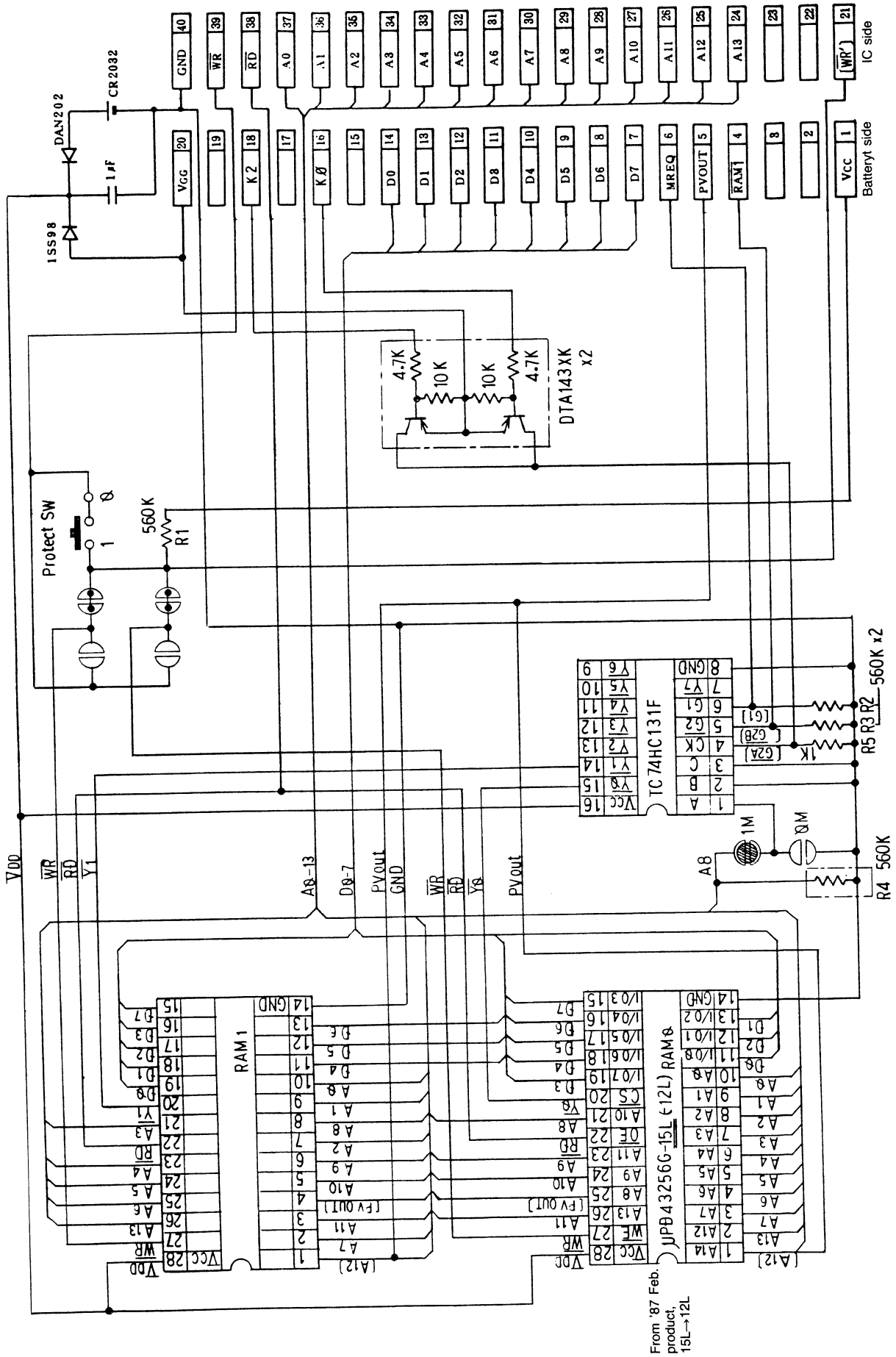
8. Parts signal layout chart





✳ : From '87 Feb. product, D43256G-12L

9. Circuit diagram



10. PARTS LIST & GUIDE

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	HDECA1007ECZZ	AB		D	Switch panel
2	LX-BZ1007ECZZ	AA		C	Screw
3	HDECA1006ECZB	AF	N	D	Panel(battery lid)
4	PZETL1013ECZZ	AA		C	Panel insulator sheet
5	PZETL1007ECZZ	AA		C	Battery sheet
6	GCABB1003ECZZ	AC		D	Top cabinet
7	PZETL1012ECZZ	AA		C	Battery insulator sheet
8	QTANZ1002ECZZ	AB		C	Battery terminal ⊖
9	QTANZ1001ECZZ	AB		C	Battery terminal ⊕
10	PZETL1010ECZZ	AA		C	Terminal insulator sheet
11	PSLDC1010ECZZ	AB		C	Shield plate
12	DUNTK1209ECZZ	BR	N	E	RAM PWB unit(64KB)
13	PSHEP1011ECZZ	AB		C	Spring fixing sheet
14	MSPRC1202CCZZ	AC		C	Spring
15	GCABC2672CCZA	AD	N	D	Terminal cover
16	GCABA1004ECZZ	AF		D	Bottom cabinet
101	QSW-S1347CCZZ	AH		B	Slide switch
102	RC-SZ1007CCZZ	AF		C	Capacitor (1μF)
103	VHDDAN202K/-1	AB		B	Diode (DAN202K)
104	VHD1SS98/-1	AD		B	Diode (1SS98)
105	VHiTC74HC131F	AH	N	B	IC (TC74HC131F)
106	VHi43256G-12L	BD	N	B	IC (43256G-12L)
	VHi43256G-15L	BD		B	IC (43256G-15L)
107	VRS-TP2BD102J	AA		C	Resistor (1/8W 1KΩ ±5%)
108	VRS-TP2BD564J	AA		C	Resistor (1/8W 560KΩ ±5%)
109	VSDTA143XK/-1	AB	N	B	Transistor (DTA143XK)
201	GCASP1091CCZZ	AE		C	Case
202	GCASP1092CCZZ	AD		C	Case cover
203	GFTAU1281CCSA	AB		D	Reverse side cover
204	PPACG1001ECZZ	AE		C	Module separater
205	TCAUH1002ECZZ	AB		C	Caution Card
206	TCAUZ1003ECZZ	AE		C	Caution label
207	TiNSL1126ECZZ	AL	N	D	Instruction book
208	TLABZ1690CCZZ	AA		D	Switch cover label
209	UKŌGD1009CCZZ	AC		C	Driver ⊕
301	SPAKA7307CCZZ	AC		D	Packing cushion
302	SPAKC0265ECZZ	AK	N	D	Packing case